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STM32H753

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INTERFACE

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CAMERA

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LCD, MEMORY

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NOISE

FD-JL-PCB-MB

U_STM32H753
STM32H753.SchDoc

U_Camera
Camera.SchDoc

DCMI

BUF1_OE_b

BUF2_OE_b

PWR_EN

I2C1

DCMI

BUF1_OE_b

BUF2_OE_b

PWR_EN

I2C1

U_LCD-Memory
LCD-Memory.SchDoc

ALS_OUT

SE_SW

LCD

SPI4

BKLED_C

BKLED_A

ALS_OUT

SE_SW

LCD

SPI4

BKLED_C

BKLED_A

U_Power
Power.SchDoc

BKLED_A

BKLED_C

BKLED_EN

PWRMON_I

PWRMON_V

PWR_SHDN

PWR_SW

BKLED_A

BKLED_C

BKLED_EN

PWRMON_I

PWRMON_V

PWR_SHDN

PWR_SW

U_Noise
Noise.SchDoc

NOISE_BIAS_EN

NOISE_AMP1_EN

NOISE_AMP2_EN

NOISE_OUT1

NOISE_OUT2

NOISE_BIAS_EN

NOISE_AMP1_EN

NOISE_AMP2_EN

NOISE_OUT1

NOISE_OUT2

U_Interface
Interface.SchDoc

I2C2

KBD_INT#

KBD_RST#

SD

SD_CD

JTAG

JTAG_RST

SYS_RST#

PWR_SW

I2C2

KBD_INT#

KBD_RST#

SD

SD_CD

JTAG

JTAG_RST

SYS_RST#

PWR_SW

CAMERA HEADER

LIGHT SENSOR

SECURE ELEMENT

LCD

POWER / REGULATORS

AVALANCHE NOISE SOURCE

KEYPAD

SD CARD

JTAG

Revisions

Rev

Description

Date

Approved

C1

Initial Release for Production

11/09/2020

M. Beach

C2

Changed R25, R27 to 10k: LED Brightness
Installed R55 and R56 with 10k: OE Pullups
Installed R54, DNI R53: ALS High Gain
Changed R61 to 220k: ALS Sensitivity
Changed R32 to 215k: 2.8V Supply
CDONE --> BUF1_OE_b, CRESET --> BUF2_OE_b

11/22/2020

M. Beach

C3

Added 2.5V VREF for ADC: U20
Removed 32kHz tuning fork pads

12/04/2020

M. Beach

D1

Added +2V8 LDO for camera
Added C54: feedback capacitor

12/18/2020

M. Beach

D2

Changed R25 from 10k to 14.3k: Blue LED brightness
Updated P1 PN to specify T&R

2/15/2021

M. Beach

E1

Updated Keypad Footprints
Changed R25 from 14.3k to 22k: Blue LED brightness
Changed R23 from 20k to 22k: BOM consolidation
DNI: U3, C2, C38, R5, R23

4/27/2021

M. Beach

PCB1

E1

PCB

FD-JL-PCB-MB

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Engineer:
M. Beach

Designer:
M. Beach

Approved:
M. Beach
Date:
04/27/2021

FOUNDATION

Drawing Title:
FD-JUL-MB.PrjPcb

Page Title:
Title.SchDoc

Size:
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Document Number
SCH_FD-JL-PCB-MB

Variant:
[No Variations]

Rev:
E1

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5

4

3

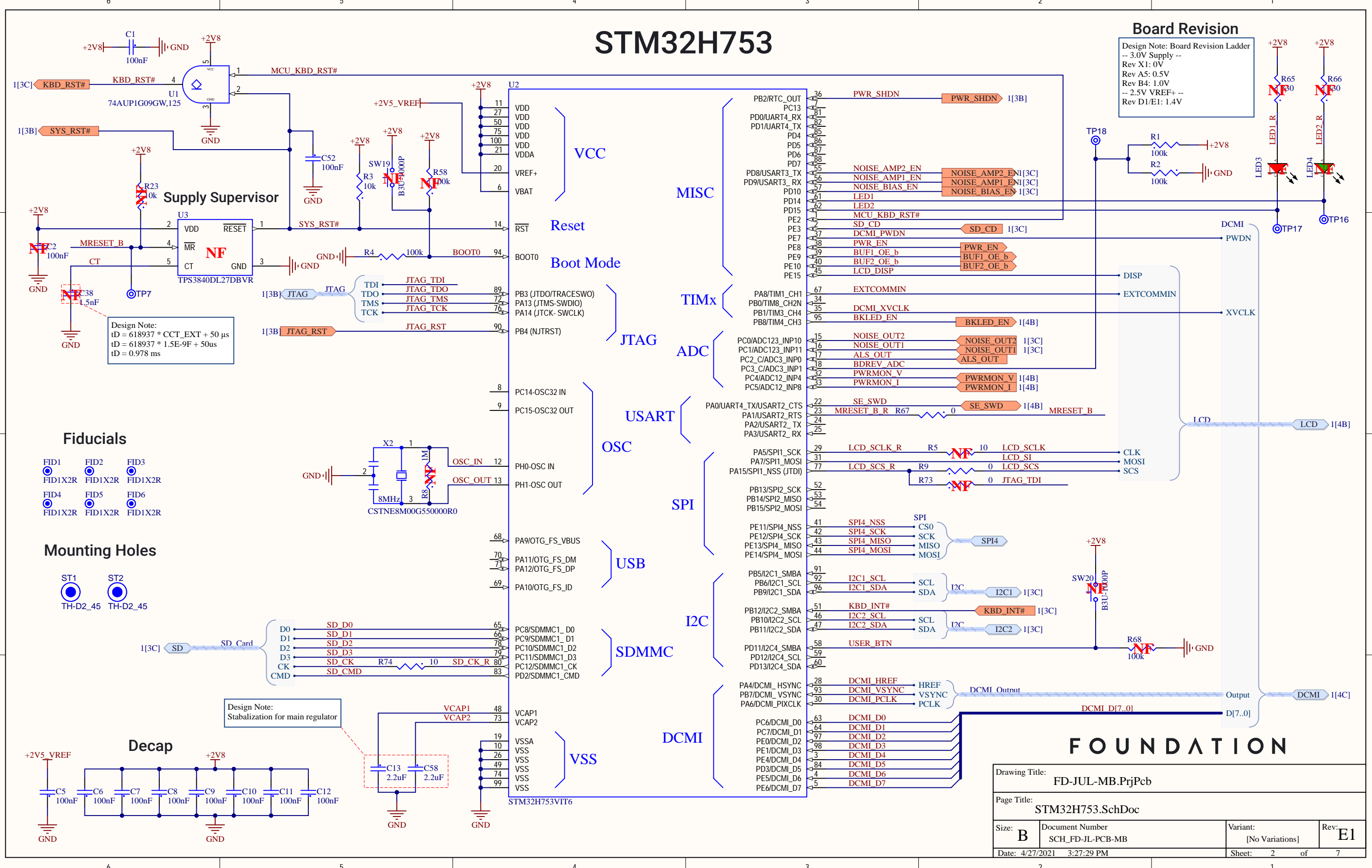
2

1

STM32H753

Board Revision

Design Note: Board Revision Ladder
-- 3.0V Supply --
Rev X1: 0V
Rev A5: 0.5V
Rev B4: 1.0V
-- 2.5V VREF+ --
Rev D1/E1: 1.4V



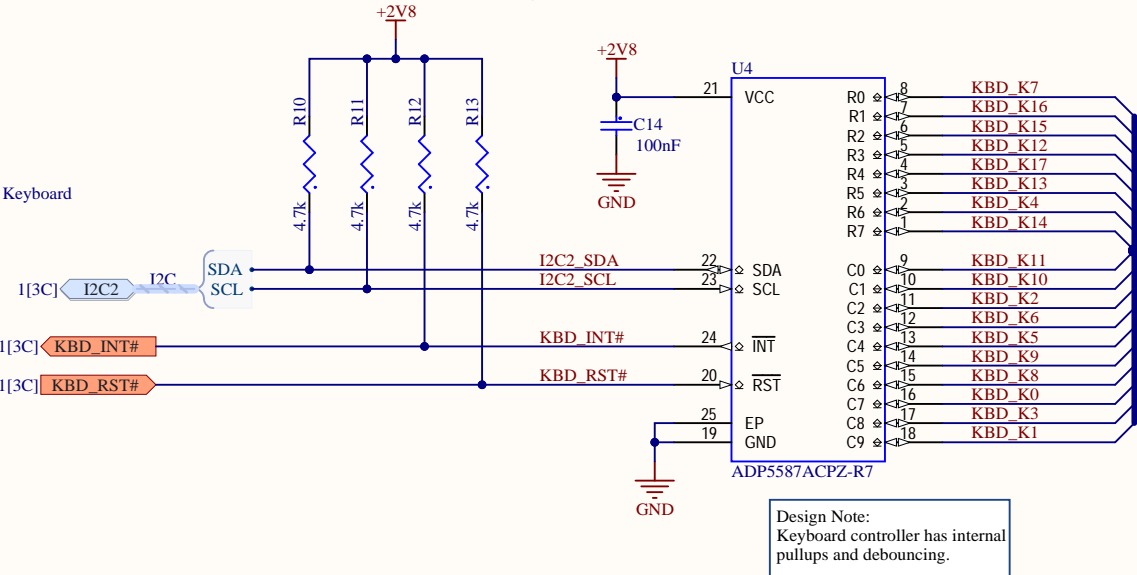
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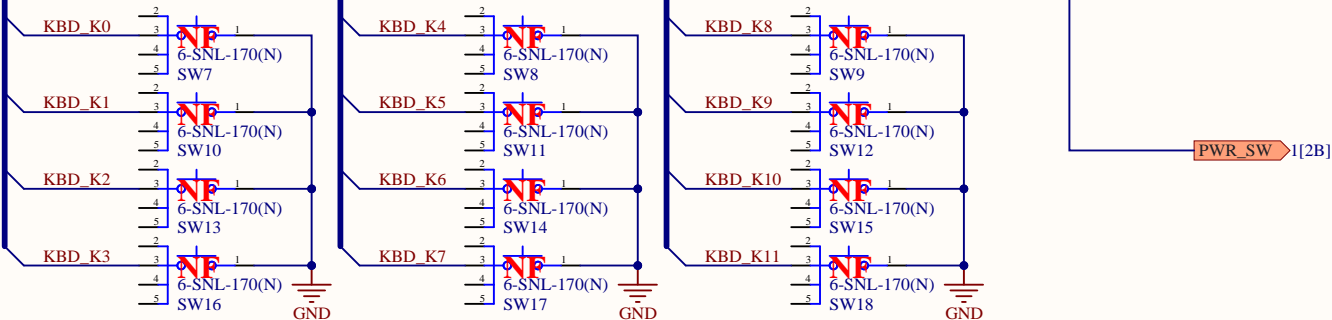
Interfaces

Keypad Controller

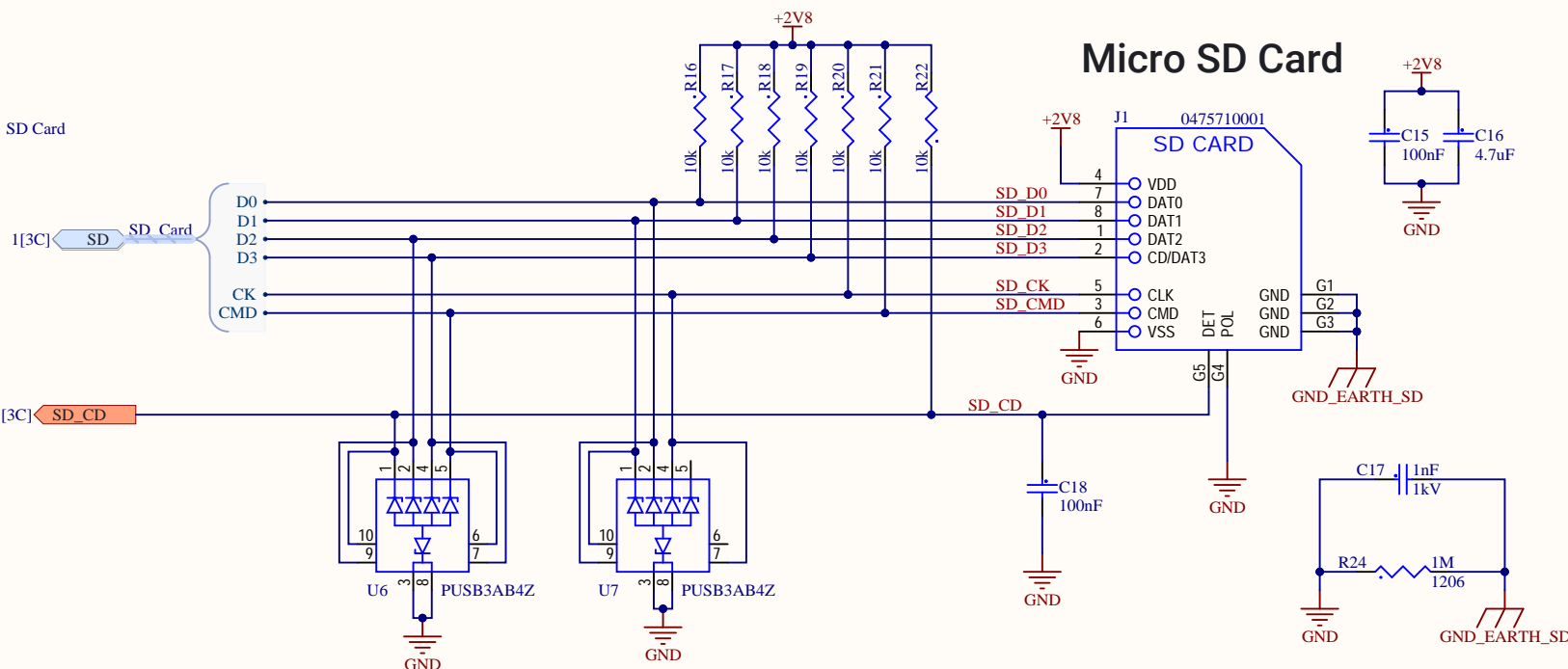
Buttons



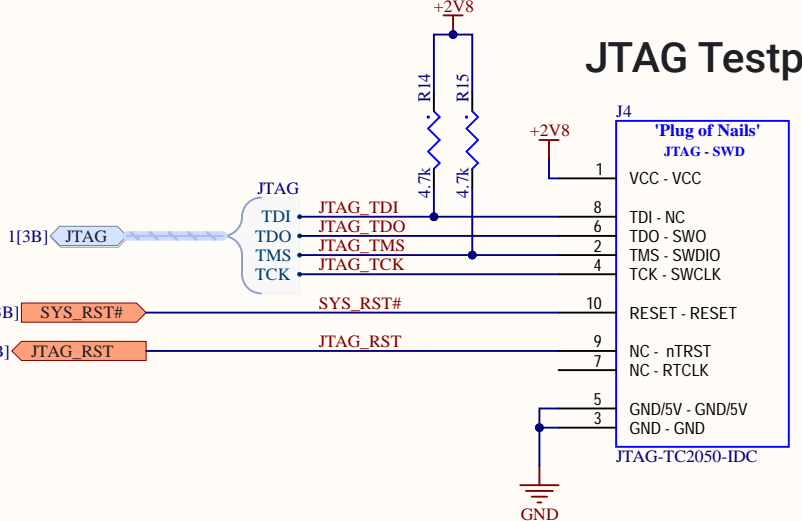
Buttons



Micro SD Card



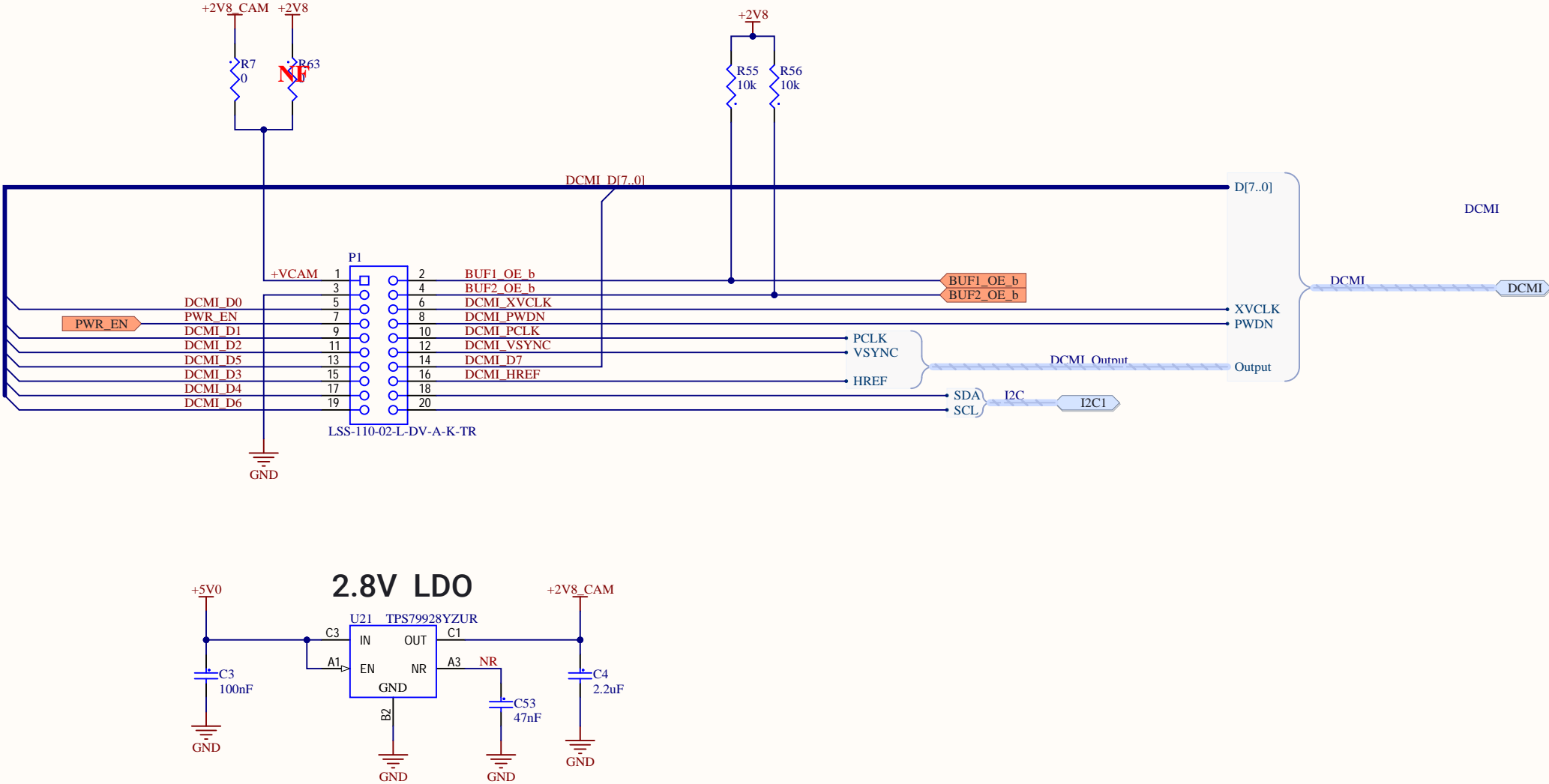
JTAG Testpoints



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Camera Connector



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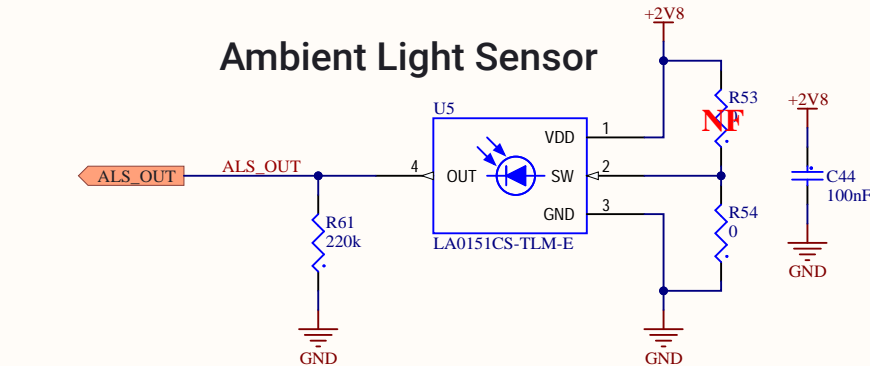
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LCD, MEMORY

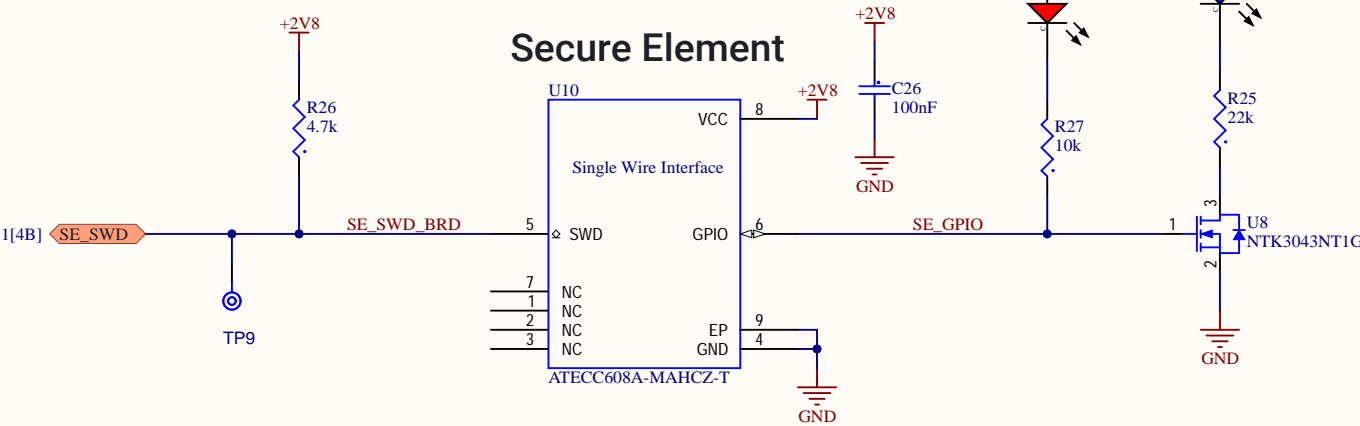
Design Note:
Signal Vih: 2.7V < Vih < 3.3V.
Applies to SCLK, SI, SCS, DISP, EXTCOMIN

Design Note:
Supply EXTCOMIN with a 1HZ pulse to
maintain current display.

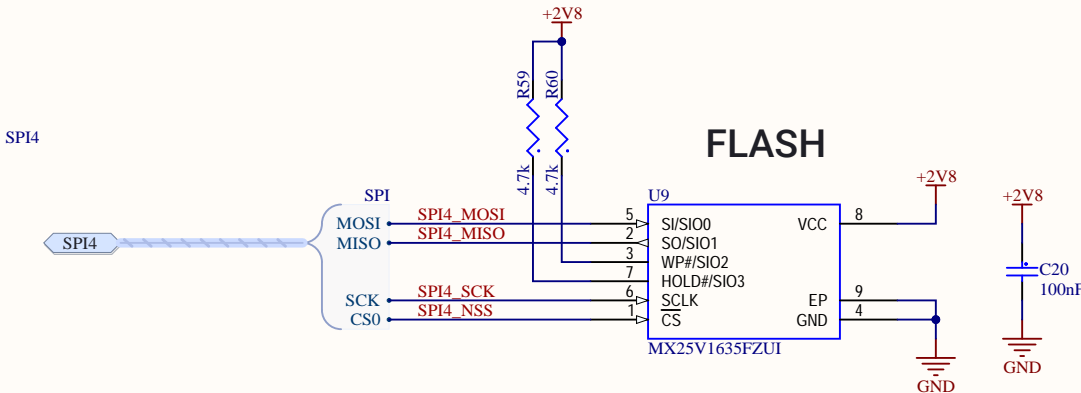
Ambient Light Sensor



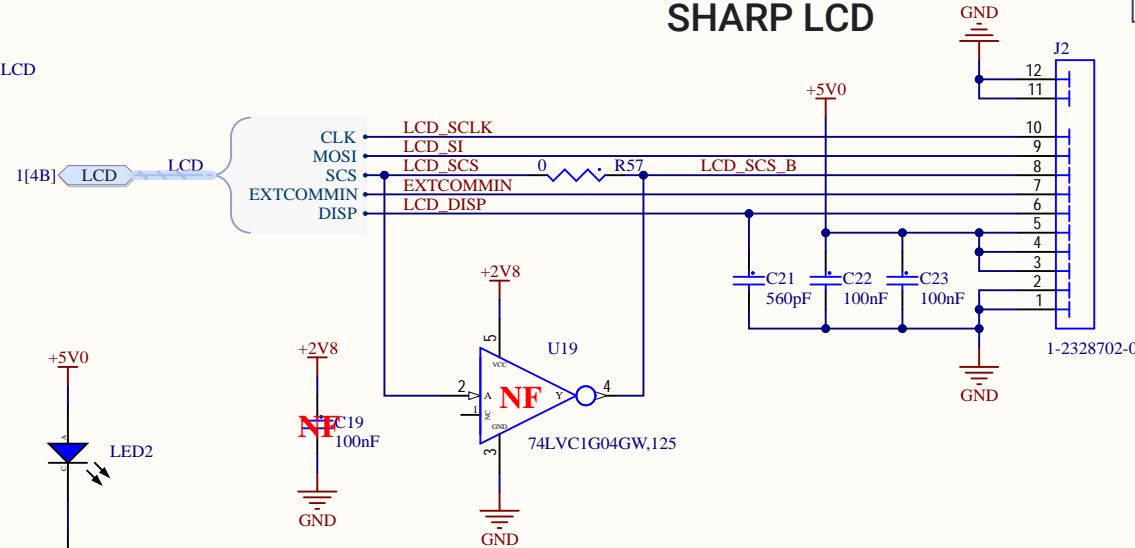
Secure Element



FLASH

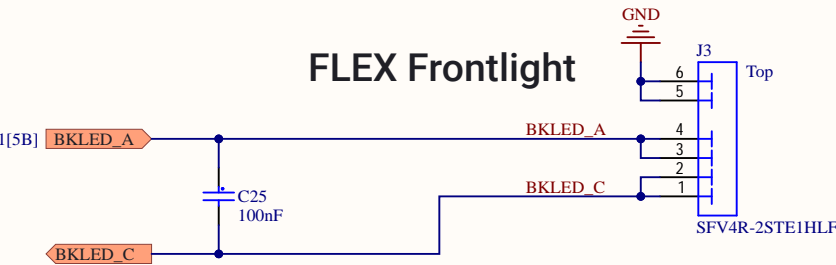


SHARP LCD



No.	Symbol
1	SCLK
2	SI
3	SCS
4	EXTCOMIN
5	DISP
6	VDDA
7	VDD
8	EXTMODE
9	VSS
10	VSSA

FLEX Frontlight

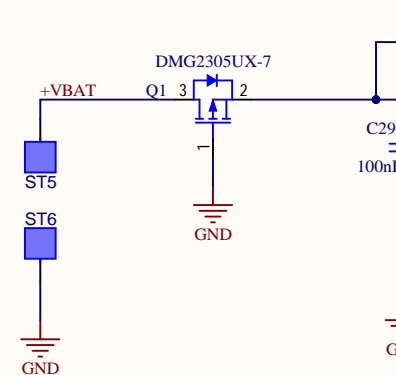


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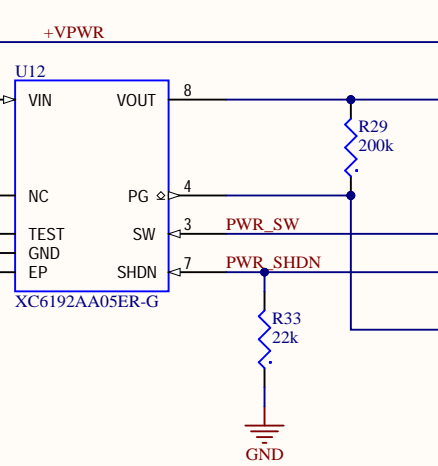
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Size: B	Document Number: SCH_FD-JL-PCB-MB	Variant: [No Variations]	Rev: E1
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Power Regulators

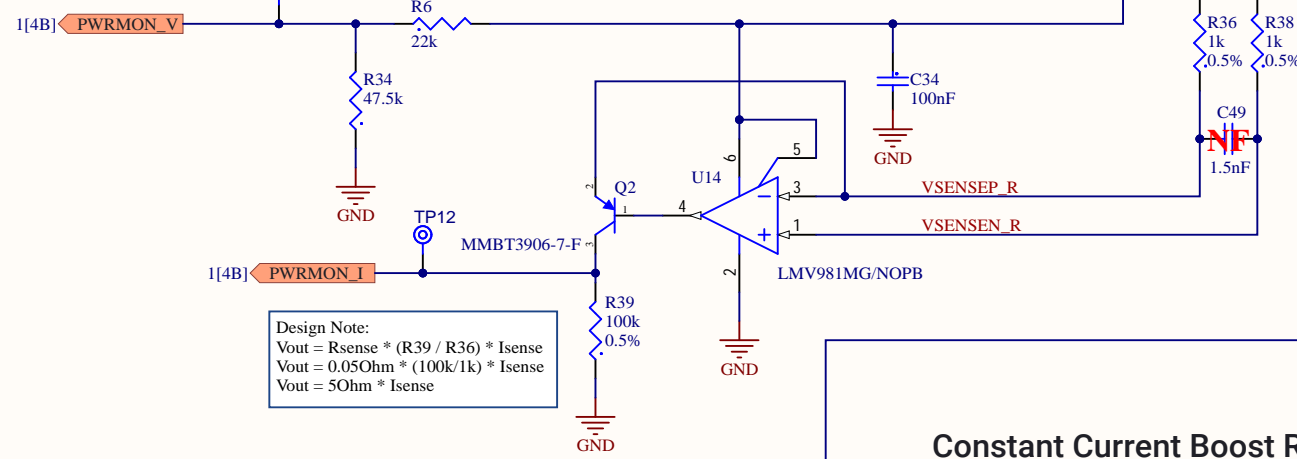
Reverse Current Protection



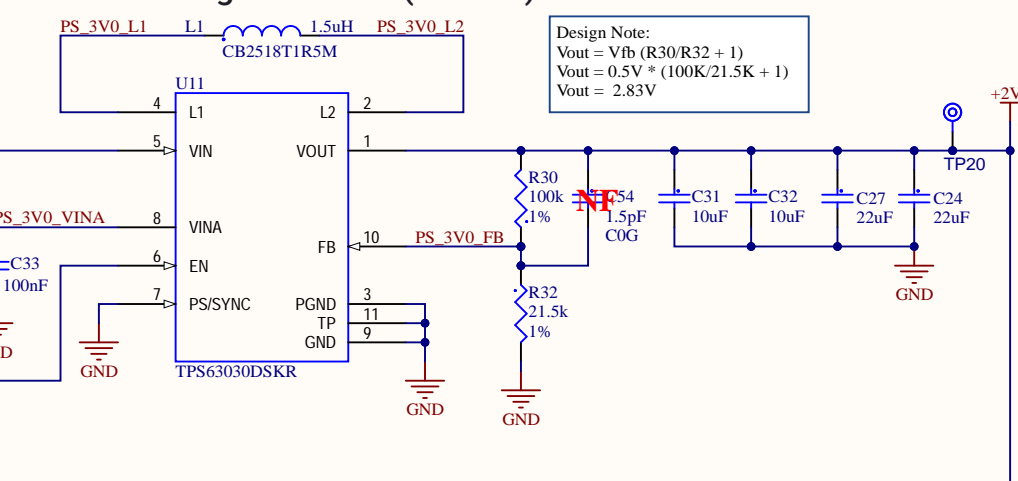
Load Switch



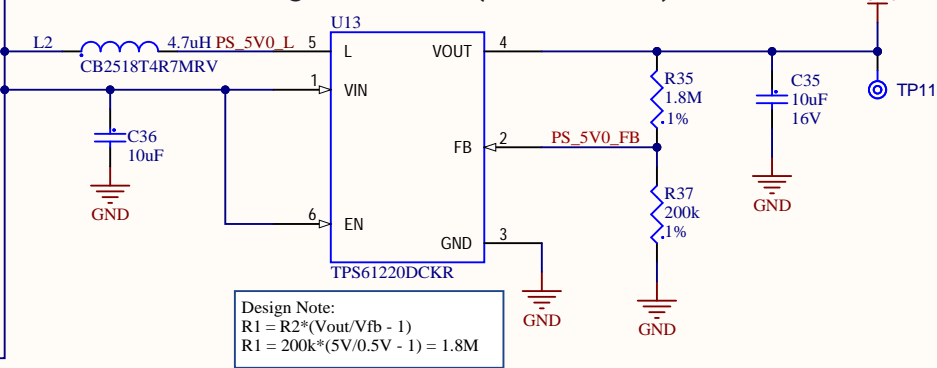
Current Monitor



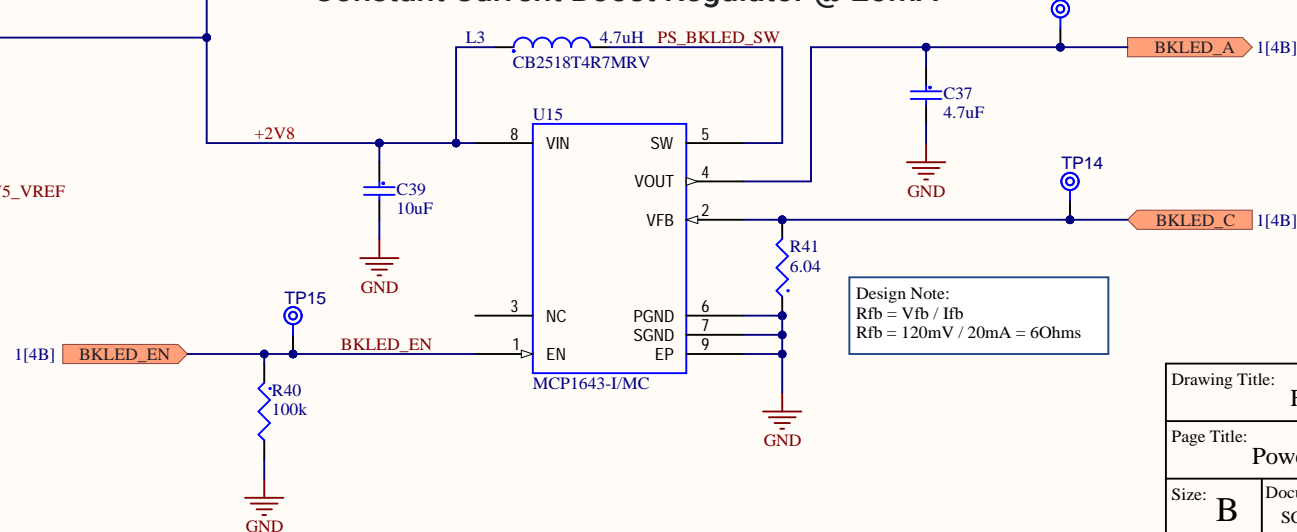
Boost-Buck Regulator: 2V8 (1A max)



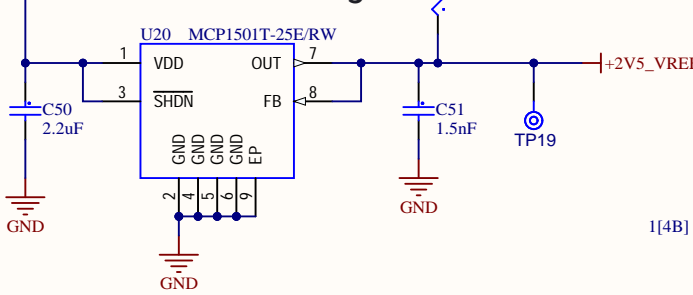
Boost Regulator: 5V0 (150mA max)



Constant Current Boost Regulator @ 20mA



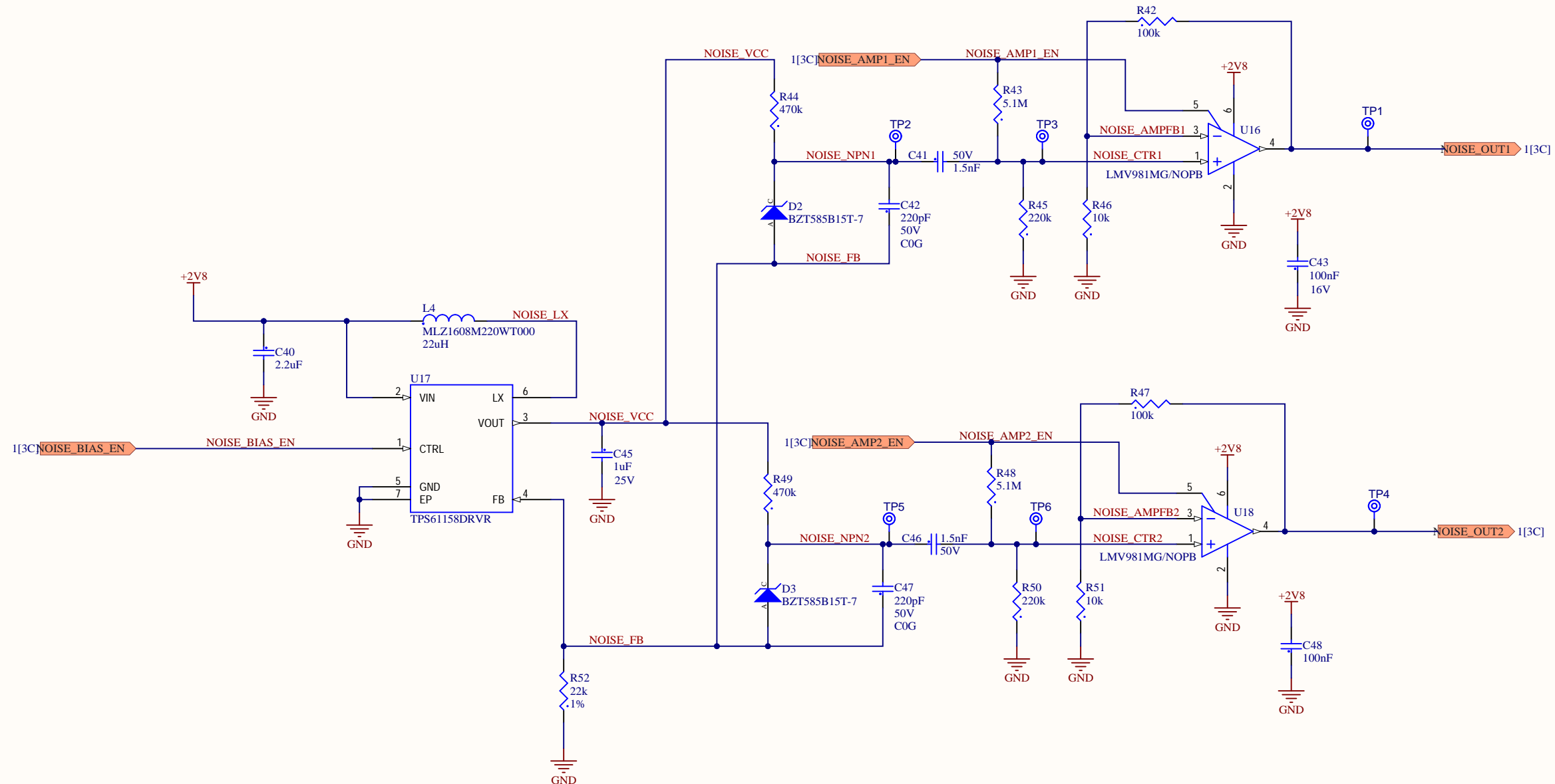
ADC Reference Voltage



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Avalanche Breakdown Noise Source



Circuit designed by:
Andrew 'bunnie' Huang
@bunniestudios
betrusted.io

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Drawing Title: FD-JUL-MB.PrjPcb			
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